1 does not meet the written description requirement. The Examiner further states that procedures for making sequence variants of cyclin E are not conventional in the art.

As noted in the previous response, adequate written description of a claimed genus can be made via structure, formula, chemical name, or physical properties. *See Ex parte Maizel*, 27 USPQ2d 1662, 1669 (B.P.A.I. 1992), *citing Amgen v. Chugai*, 927 F.2d 1200, 1206 (Fed. Cir. 1991).

A relatively high percent identity of a specific sequence (structure or formula) is provided in the claims. Further, the Examiner's attention is directed to page 6, lines 3-6, where "CycE polynucleotide" is defined as a polynucleotide which encodes a polypeptide that i) binds to Cdk2 and Rb proteins, ii) contains a cyclin box (Jeffrey et al. 1995, Nature 367:313-320P, and iii) contains the conserved motif TTPXS near the carboxy-terminus. Therefore, the specification does disclose how the structure of the claimed invention is correlated with cyclin E activity.

The specification provides the sequence of the maize cyclin E polynucleotide containing the CDK2 phosphorylation site that is the well-known functional motif of cyclin E proteins and is diagnostic of cyclin E. In addition, the sequence provided in the specification has high homology in the highly conserved and well-known cyclin box. (*Please see* Declaration of William J. Gordon-Kamm, filed June 28, 2001, where six references are cited that are used in identifying various aspects of Cyclin E sequences.)

Claims 2-18, 23-25 and 27-53, 64, 66-69 and 71-74 are rejected under 35 U.S.C. § 112, first paragraph, for enablement. The Examiner states that the specification does not disclose modification or variants of SEQ ID NO: 1. The Examiners also states that the specification does not disclose the structural features of the claimed sequences that are critical to the claimed functions.

As detailed above, the specification provides not only the full-length polynucleotide sequences of the present invention, but also guidance on

modifications and variants. The specification provides methods to identify compositions and assays to determine their functionality. Although assaying will be required to identify candidates, this does not mean the invention is not enabled. In addition to the methods described in altering codon usage, the specification also provides methods for finding functional variants by hybridization, oligonucleotide-directed mutagenesis, linker-scanning mutagenesis, mutagenesis using the polymerase chain reaction, and the like. (*Please see* pages 14-16 of the present specification.) Applicants have provided both how the structure of the claimed invention is correlated with function and various ways to find variants or modify the present sequence. Therefore, the Applicants respectfully submit that the specification describes the invention in sufficient detail to reasonably convey the scope of the invention. As discussed in previous responses, the testing to determine functionality is routine.

Claims 16-18 are rejected under 35 U.S.C. § 101 for not being supported by a specific and substantial utility. The Examiner states that because nontransformed plants already possess endogenous cyclin E genes, the claimed transgenic plants and seed need some specific and substantial utility relative to nontransformed plants.

Overexpression of cyclin E genes can stimulate the endoreduplication process in plants and can be used to purposely stimulate endoreduplication in tissues where the process normally does not occur. (*Please see* page 12, lines 9-12 of the present specification.) By stimulating cell division in specific tissues, increased growth of the tissues could increase crop yield, growth, and biomass accumulation. (*Please see* page 12, lines 13-27 of the present specification.) In particular, overexpression of cyclin E could lead to increased vegetative growth in the stem and/or leaves, increased ear size, kernel size, etc. Thus, the claimed invention has a specific and substantial utility in transformed plants and seeds.

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Applicants have provided specific and substantial utility of the present claimed invention. The Examiner has not cited anything that would discredit the above utilities. An assertion is credible unless (A) the logic underlying the assertion is seriously flawed, or (B) the facts upon which the assertion is based are inconsistent with the logic underlying the assertion. A credible utility is assessed from the standpoint of whether a person of ordinary skill in the art would accept that the recited or disclosed invention is currently available for such use. The Examiner has provided no evidence to contradict the assertions in the present application.

Withdrawal of the rejection of claim 22 under 35 U.S.C. § 112, first paragraph, for enablement and written description, is noted with appreciation.

Withdrawal of the rejection of claims 2-15 and 22 under 35 U.S.C. § 101 for not having a specific and substantial utility, is noted with appreciation.

In view of the above comments withdrawal of the outstanding rejections and allowance of all of the remaining claims is respectfully requested.

Respectfully submitted,

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